

Announcements

□ 1st EXAM *TOMORROW!*

□ NO Homework for tomorrow...

CQ7: a) $Q \rightarrow Q$

b) $E \rightarrow E/2$

c) $\Delta V_c \rightarrow \Delta V_c$

28.20: a) $1.0 \times 10^3 \text{ V}$

b) $7.0 \times 10^6 \text{ m/s}$

28.22: $-5.8 \times 10^3 \text{ V}$

28.34: $x = 3 \text{ cm}$

□ Office hours...

MW 10-11 am

TR 9-10 am

F 12-1 pm

□ Tutorial Learning Center (TLC) hours:

MTWR 8-6 pm

F 8-11 am, 2-5 pm

Su 1-5 pm

Outline...

CH 25 – Electric Charges & Forces

- ▣ Developing a Charge Model
- ▣ Charge
- ▣ Insulators & Conductors
- ▣ Coulomb's Law
- ▣ The Field Model

CH 26 – The Electric Field

- ▣ Electric Field Models
- ▣ E -Field of Multiple Pt. Charges
- ▣ E -Field of a Continuous Charge Distribution
- ▣ E -Fields of Rings, Disks, Planes, & Spheres
- ▣ The Parallel-Plate Capacitor
- ▣ Motion of a Charged Particle in an E -Field

CH 27 – Gauss's Law

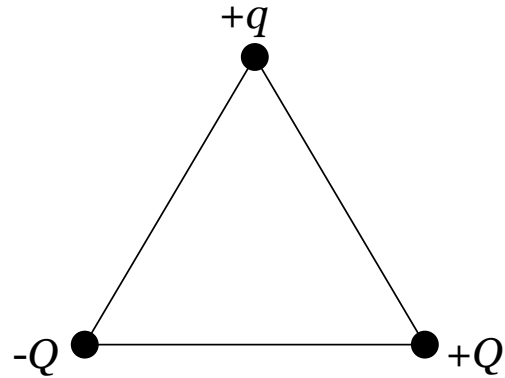
- ▣ Conductors in Electrostatic Equilibrium

CH 28 – The Electric Potential

- ▣ Electric Potential Energy
- ▣ The Potential Energy of Point Charges
- ▣ The Electric Potential
- ▣ The Electric Potential inside a Parallel-Plate Capacitor
- ▣ The Electric Potential of a Point Charge
- ▣ The Electric Potential of Many Charges

Q1

Charges $+Q$, $-Q$, and q are placed at the vertices of an equilateral triangle as shown. The total force exerted on charge q is:

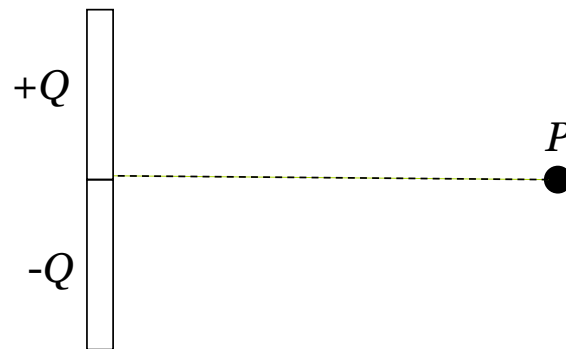


1. toward charge $+Q$.
2. toward charge $-Q$.
3. away from charge $+Q$.
4. at right angles to the line joining $+Q$ and $-Q$.
5. parallel to the line joining $+Q$ and $-Q$.

Q2

Positive charge $+Q$ is uniformly distributed on the upper half of a rod and a negative charge $-Q$ is uniformly distributed on the lower half.

What is the direction of the electric field at point P , on the perpendicular bisector of the rod?

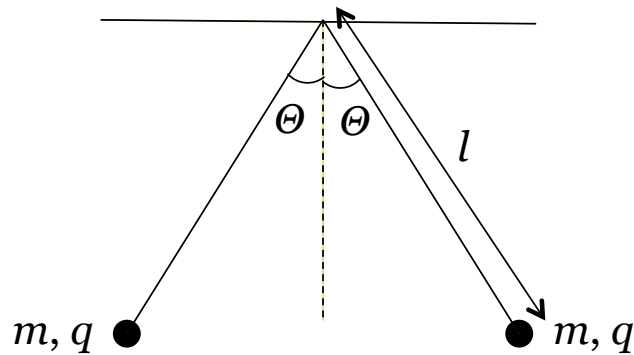


1. Up.
2. Down.
3. Left
4. Right.
5. Up and to the left.

i.e. 1

Two identical, charged spherical masses of $m = 1.00$ kg are each attached to a light string of length $l = 1.00$ m as shown in the figure below. The string makes an angle of 30° with the vertical.

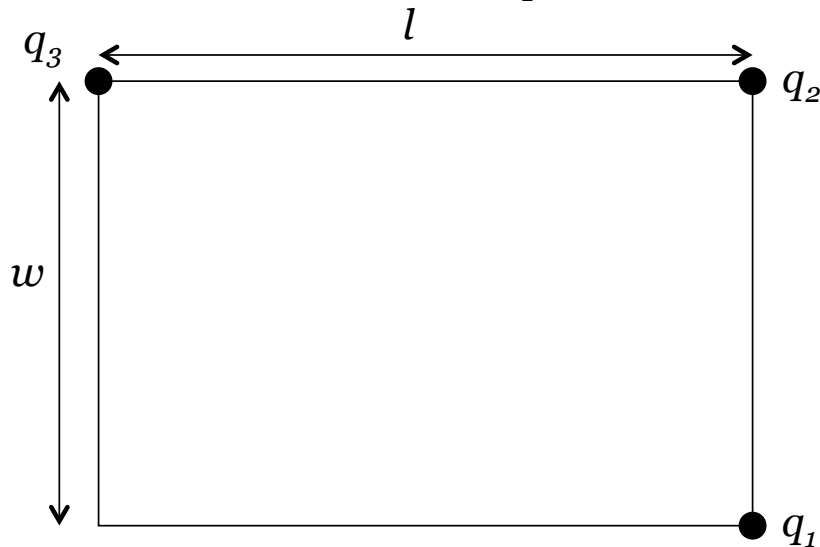
What is the charge on each mass?



i.e. 2

What is the electric field at the location of q_1 , due to q_2 and q_3 ?

What is the force on charge q_1 ?



The rectangle has dimensions given by $l = 4.0$ m and $w = 3.0$ m. The charges are $q_1 = -10\mu\text{C}$, $q_2 = 100\mu\text{C}$, and $q_3 = 32\mu\text{C}$.